

ADT 2A AMEND

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### CLAIMS

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1. An apparatus including thermal stress reduction, comprising:  
a package;  
a mass coupled to the package, the mass having a surface, the mass further including an active region; and  
one or more substantially rigid members for attaching at least one point on the surface to the package to create a resilient coupling between the mass and the package, wherein at least a portion of the active region is spaced apart from the at least one point of attachment.
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2. The apparatus of claim 1, wherein the package comprises; a package including a cavity for receiving the mass.
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2
3. The apparatus of claim 1, wherein the package comprises:  
a package including a recess for receiving the rigid member.
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4. The apparatus of claim 1, wherein the mass comprises one or more bond pads for coupling the mass to the package.
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5. The apparatus of claim 4, wherein the bond pads have a cross-sectional shape selected from the group consisting of approximately rectangular, approximately oval, approximately tri-oval, approximately oct-oval, approximately wavy sided rectangular, approximately oct-pie-wedge, approximately hollow oct-pie-wedge, approximately nine-circular, approximately starburst, or approximately sunburst.
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6. The apparatus of claim 4, wherein the mass comprises one or more passive regions; and  
wherein the bond pads are approximately located in the passive regions.

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- 1 7. The apparatus of claim 4, wherein the mass further comprises a first passive  
2 region; and  
3 wherein the bond pads are approximately located in the first passive region.
- 1 8. The apparatus of claim 7, wherein the first passive region is located at one end of  
2 the mass.
- 1 9. The apparatus of claim 4, wherein the mass further comprises a first passive  
2 region and a second passive region; and  
3 wherein the bond pads are located in the first passive region and the second  
4 passive region.
- 1 10. The apparatus of claim 9, wherein the first passive region is located at one end of  
2 the mass; and  
3 wherein the second passive region is located at the opposite end of the mass.
- 1 11. The apparatus of claim 4, wherein the mass further comprises a first passive  
2 region integral to the active region; and  
3 wherein the bond pads are located in the first passive region.
- 1 12. The apparatus of claim 11, wherein the first passive region is located at one end  
2 of the mass; and  
3 wherein the first active region is located at the opposite end of the mass.
- 1 13. The apparatus of claim 4, wherein the mass further comprises an active region;  
2 and  
3 wherein the bond pads are approximately located in the active region.
- 1 14. The apparatus of claim 13, wherein the bond pads are located in the approximate  
2 center of the active region.

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22. The apparatus of claim 1, wherein the package comprises:  
a package including a pedestal for supporting the rigid members.

1 23. The apparatus of claim 1, wherein the mass is a micro-machined device, an  
2 integrated circuit chip, or an optical device.

1 24. The apparatus of claim 1, wherein the rigid members further electrically couple  
2 the mass to the package.

1 25. A method of coupling a mass having an active region to a package to reduce  
2 effects of thermal stress, comprising:  
3 attaching at least one surface point on the mass to the package using one or more  
4 substantially rigid members to create a resilient coupling between the mass and  
5 the package, wherein at least a portion of the active region is spaced apart from  
6 the at least one point of attachment.

1 26. The method of claim 25, wherein attaching the mass comprises attaching the mass  
2 at a plurality of locations.

1 27. The method of claim 25, wherein the mass comprises a passive region, and  
2 wherein attaching the mass comprises attaching the passive region to the package.

1 28. The method of claim 27, wherein the passive region is located at one end of the  
2 mass.

1 29. The method of claim 25, wherein attaching the mass comprises attaching the  
2 active region to the package.

1 30. The method of claim 29, wherein attaching the active region comprises attaching  
2 the approximate center of the active region to the package.

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1 31. The method of claim 25, wherein the mass comprises a first passive region and  
2 a second passive region; and  
3 wherein attaching the mass comprises attaching the first passive region to the  
4 package and attaching the second passive region to the package.

1 32. The method of claim 31, wherein the first passive region is located at one end of  
2 the mass; and  
3 wherein the second passive region is located at an opposite end of the mass.

1 33. The method of claim 25, wherein the mass further comprises a passive region  
2 integral to the active region; and  
3 wherein attaching the mass comprises attaching the passive region to the package.

1 34. The method of claim 33, wherein the passive region is at one end of the mass; and  
2 wherein the active region is at the opposite end of the mass.

1 35. The method of claim 25, wherein attaching the mass comprises permitting the  
2 mass to expand and contract without inducing stresses in the mass.

1 36. The method of claim 25, wherein attaching the mass comprises providing for  
2 expansion and contraction of the package without inducing stresses in the mass.

1 37. The method of claim 25, further comprising slidably supporting the mass at one  
2 or more different locations.

1 38. The method of claim 37, wherein slidably supporting the mass comprises  
2 slidably supporting the mass at a plurality of locations.

1 39. The method of claim 37, wherein slidably supporting the mass comprises  
2 providing for expansion and contraction without inducing stresses in the package.

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41. The method of claim 25, further comprising electrically coupling the mass to the package at one or more different locations.

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